REMARKS

This Response is submitted in reply to the Final Office Action dated December 8, 2010. Applicant respectfully requests reconsideration and further examination of the patent application pursuant to 37 C.F.R. § 1.113.

Summary of the Examiner's rejections

Claims 33-34, 43-46, 52-54 and 59 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Jeffries (US 2004/0062259) in view of Bird (US 6,657,954).

Claims 35, 37-42, 47, 55, 57, 58 and 60 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Jeffries (US 2004/0062259) in view of Bird (US 6,657,954) and further in view of Meyer et al (US 2002/0145976).

Claims 48-51 and 61-64 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Remarks regarding objected claims

Claims 48-51 and 61-64 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant respectfully submits that the base claims 33 and 53 associated with the objected claims 48-51 and 61-64 are patentable over the cited prior art.

Remarks regarding the §103(a) rejections

Applicant respectfully traverses the obviousness rejection of the pending independent claim 33 in view of Jeffries and Bird. The pending independent claim 33 recites the following:

> 33. A method implemented by a network node for controlling a queue buffer, the queue buffer being connected to a link and being arranged to queue data units of a flow in a queue, comprising the steps of:
>
> determining a value of a length parameter related to the length of the queue;

> comparing the value with a length threshold value;
> performing a congestion notification procedure if the value is greater than the length threshold value, wherein the congestion notification procedure when performed drops or marks one or more data units;
> performing an automatic threshold adaptation procedure, wherein the automatic threshold adaptation procedure comprises a procedure for adjusting the length threshold value on the basis of one or more flow control parameters, wherein the automatic threshold adaptation procedure determines when the congestion notification procedure would be performed to drop or mark one or more of the data units; and
> determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue (emphasis added).

In the Final Office Action, the Examiner noted that the closest prior art Jeffries disclosed the following:

> Congestion notifications are generated by core nodes using a queue-length thresholding technique based on a modified form of the RED (Random Early Detection) system. RED is an active queue management technique wherein an average queue length is compared with a minimum and a maximum threshold. For average queue lengths above the maximum threshold all packets are dropped. For average queue lengths between the two thresholds packets are randomly transmitted into the queue with a transmit probability dependent on the average queue length.

(see paragraph [0004] lines 21-31)

The Examiner was correct when indicated that Jeffries failed to teach the highlighted steps: performing an automatic threshold adaptation procedure, wherein the automatic threshold adaptation procedure comprises a procedure for adjusting the length threshold value on the basis of one or more flow control parameters, wherein the automatic threshold adaptation procedure determines when the congestion notification procedure would be performed to drop or mark one or more of the data units; and determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue. In an attempt to correct Jeffries's deficiencies, the Examiner cited Bird and stated "Bird et al. from the same or similar field of endeavor teach implementing fairness of the method, performing an automatic threshold adaptation

procedure, wherein the automatic threshold adaptation procedure comprises a procedure for adjusting the length threshold value on a basis of one or more flow control parameters (column [6] lines 39-52), wherein the automatic threshold adaptation procedure determines when the congestion notification procedure would be performed to drop one of the data units (column [7] lines 14-21); and determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue (column [6] lines 39-52) (see pages 3-4 of the pending Office Action). The relevant sections of Bird are as follows:

> The techniques of the present invention monitor indicators of network conditions at a receiver component. When specific conditions are detected, the receiver adapts its threshold according to algorithms defined herein. As stated previously, a threshold is a value used by a receiver to determine whether the sender needs to increase or decrease the rate at which it puts data traffic into the network. The receiver compares an accumulated delay change sum (see FIG. 3) to the threshold value, and uses the result to respond to the sender's request for flow control feedback. Prior art receiver thresholds used static values. The dynamic threshold adaptation of the present invention enables the receiver to more accurately respond to the sender's requests for feedback. The sender can then use this more-accurate feedback to make adjustments to the transmission rate that result in more immediate reaction to network conditions than was possible with prior art techniques. The present invention applies to the monitoring of conditions, and threshold adaptation performed in response to these conditions, that are performed by the receiver. Actions taken by the sender are outside the scope of this invention.
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> (see col. 6, lines 39-59)

> Techniques for monitoring three specific indicators of network conditions are defined herein. Each of these techniques may be used separately, or they may be used in combination. Using these techniques provides for self-calibration of the receiver threshold, without the need for a user to make threshold adjustments. This self-calibration is useful for dynamically detecting, and quickly responding to, unexpected conditions in the network. For example, the threshold may have been set incorrectly originally, based upon incorrect predictions about such things as network load, link speed, etc. Or, bandwidth may have been added after the threshold was originally set, so that the original setting was correct at the time but no longer is appropriate for the current capacity. The present invention also detects a sender that is just "ramping up", i.e. just beginning to send data, and allows the sender to come up to speed very quickly. This situation is detected by a first monitor that keeps track of the percentage of "increase" messages sent over a recent interval. This monitor also detects the presence or absence of congestion in the network, and adjusts the threshold in response. A higher threshold is used when the network is not congested, so that more increase messages will be sent to the

> sender, requesting the sender to increase its transmission rate. Conversely, the threshold is lowered when congestion is detected, so that the sender will decrease the transmission rate.
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> (see col. 6, line 62 through col. 7, line 21)

In the Final Office Action, the Examiner interpreted Bird in relation to the pending independent claim 33 as follows:

> The prior art further teach the techniques to monitor indicators of network conditions at a receiver component. **When specific conditions are detected, the receiver adapts its threshold according to algorithms** defined herein. As stated previously, a **threshold is a value used by a receiver to determine whether the sender needs to increase or decrease the rate at which it puts data traffic into the network (Examiner's Notes: the "receiver" as an element in the network has the same function as "network node" in the instant application**). The receiver compares an accumulated delay change sum (see FIG. 3) to the threshold value, and uses the result to respond to the sender's request for flow control feedback. Prior art receiver thresholds used static values. The dynamic threshold adaptation of the present invention enables the receiver to more accurately respond to the sender's requests for feedback (column [6] lines 39-52, Bird et al.). **This monitor also detects the presence or absence of congestion in the network, and adjusts the threshold in response.** A higher threshold is used when the network is congested, so that more increase messages will be sent to the sender, requesting the sender to increase its transmission rate. Conversely, the threshold is lowered when congestion is detected, so that the sender will decrease the transmission rate **(Examiner's Notes: this feature teaches the same functions "determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue" as described in the instant application)** (column [7] lines 14-21, Bird et al.)
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> (see pages 16-17 of the Final Office Action).

Thus, the Examiner interpreted Bird's receiver to be the same as the claimed network node. However, even assuming this interpretation is correct Bird's receiver still adjusts a threshold used to determine whether the sender needs to increase/decrease the transmission rate at which it puts data traffic into the network (col. 6, lines 42-44). In contrast, the claimed network node adjusts the length threshold value associated with a queue. Hence, Bird does not correct Jeffries deficiency with respect to the claimed

"performing an automatic threshold adaptation procedure, wherein the automatic threshold adaptation procedure comprises a procedure for adjusting the length threshold value on the basis of one or more flow control parameters, wherein the automatic threshold adaptation procedure determines when the congestion notification procedure would be performed to drop or mark one or more of the data units (emphasis added).

Furthermore, since Bird fails to teach the claimed "adjusting the length threshold value" it follows that Bird would also fail to teach the claimed "adjusting the length threshold value on the basis of one or more flow control parameters ... where the one or more flow control parameters are determined from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue". This is indeed the case. In this regard, the Examiner stated that Bird's "**monitor also detects the presence or absence of congestion in the network, and adjusts the threshold in response.** A higher threshold is used when the network is congested, so that more increase messages will be sent to the sender, requesting the sender to increase its transmission rate. Conversely, the threshold is lowered when congestion is detected, so that the sender will decrease the transmission rate **(Examiner's Notes: this feature teaches the same functions "determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue" as described in the instant application)** (column [7] lines 14-21, Bird et al.)(see pages 16-17 in Final Office Action). The Examiner is mistaken. Bird's monitor detecting the presence or absence of congestion in the network is not the same or even related to the broadest possible interpretation of the claimed flow control parameter which is determined from a flow control parameter introduced by one of the sender and receiver of the flow queued in the queue. In particular, the claimed flow control parameter is clearly a parameter that is used to control the flow and which it is introduced by one or both of the sender and receiver. This is not the same as Bird's monitor detecting the presence or absence of congestion in the network. Furthermore, Applicant directs the Examiner's attention to the pending dependent claims 34-35, 37-45 which recite exemplary flow control parameters.

Moreover, since Bird fails to teach the claimed "adjusting the length threshold value" it follows that Bird would also fail to teach the claimed "performing an automatic threshold adaptation procedure ... which comprises a procedure for adjusting the length threshold value ... wherein the automatic threshold adaptation procedure determines when the congestion notification procedure would be performed to drop or mark one or more of the data units". This is indeed the case. Bird's monitor detects the presence or absence of congestion in the network so the receiver can determine whether the sender needs to increase/decrease the transmission rate at which it puts data traffic into the network. Thus, Bird's sender does not "drop" data traffic nor does it make sense for Bird's receiver to request that the sender "drop" data traffic no matter how much congestion the network is currently experiencing. Plus, there is no disclosure where Bird's sender "marks" data traffic. In view of at least the foregoing, Jeffries and Bird fail to disclose or teach all of the limitations that are recited in the pending independent claim 33. Hence, the Applicant respectfully requests the allowance of the pending independent claim 33 and the corresponding dependent claims 34-35 and 37-52.

In addition, the Examiner failed to respond to the Applicant's argument in the previously filed amendment where the Applicant traversed the Examiner's motivation for combining Jeffries and Bird to reject the pending independent claim 33. In particular, Applicant contended that even if Jeffries and Bird teached all of the claimed limitations, which they do not, there is no motivation to combine Jeffries and Bird to reject the claimed invention. In this regard, the Examiner combined Jeffries and Bird and stated the following:

> "Thus, it would have been obvious to one of ordinary skill in the art to implement the method of Bird et al. in the system of Jeffries et al. The method of Jeffries et al. can be implemented on any type of the method performing an automatic threshold adaptation procedure, wherein the automatic threshold adaptation procedure comprises a procedure for adjusting the length threshold value on the basis of one or more flow control parameters, wherein the automatic threshold adaptation procedure determines when the congestion notification procedure would be performed to drop one of the data units; and determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue, which is taught by Bird et al. **The**

> **motivation for using the method of Jeffries et al. on performing an automatic threshold adaptation procedure**, wherein the automatic threshold adaptation procedure comprises a procedure for adjusting the length threshold value on the basis of one or more flow control parameters, wherein the automatic threshold adaptation procedure determines when the congestion notification procedure would be performed to drop one of the data units; and determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue, **is to enhance the efficient way for flow control**.
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> (see page 4 of the Final Office Action)(emphasis added)

However, Applicant respectfully submits that this is not a proper suggestion for combining Jeffries and Bird. Applicant wishes to remind the Examiner of the basic legal principles for rejecting a claim under 35 U.S.C.§103. Specifically, in In re Rouffet, 47 U.S.P.Q.2d 1453 (Fed. Cir. 1998) the Federal Circuit explained:

> To reject claims in an application under section 103, an examiner must show an unrebutted prima facie case of obviousness. In the absence of a proper prima facie case of obviousness, an applicant who complies with the other statutory requirements is entitled to a patent.
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> Id. at 1455 (citations omitted and emphasis added).

In the Rouffet case, the Examiner had rejected the pending claims on a combination of references. The Board sustained the Examiner. However, the Federal Circuit reversed the Board's decision and ruled that the Examiner's rejections were legally impermissible because they failed to demonstrate a suggestion for combining the references in the manner proposed by the Examiner. As explained by the Federal Circuit:

> As this court has stated, "virtually all [inventions] are combinations of old elements." Therefore, an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the

> patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to **show** a motivation to combine the references that create the case of obviousness.

Id. at 1457-58 (citations omitted and emphasis added).

These principles have not been followed in rejecting the pending independent claim 33. Because, by merely stating that there is a motivation to combine the references in order to "enhance the efficient way for flow control" as was done to reject the pending independent claim 33 is not the same as "show[ing] a motivation to combine the references." In particular, the problem with this logic is that it effectively eliminates the requirement of identifying a factual suggestion for combining references from the obviousness analysis. And, since it is a statutory requirement that all inventions have utility, there will also always be an identifiable end or advantage in combining the elements in the prior art in the manner proposed by any claim (e.g., if there was no purpose to an element in a claim it would not be included in the claimed apparatus, after all, who would pursue a claim with superfluous elements or a claim with no utility?). Therefore, if the "suggestion" requirement of 35 U.S.C. § 103 can be met by merely stating there is desire to "enhance the efficient way for flow control" then the suggestion requirement can always be met and is utterly meaningless. Simply put, there is *always* an advantage associated with improving a method that can be meet by combining old elements which can be identified through hindsight *once that combination is known*. Accordingly, Applicant respectfully submits that the §103 rejection of the pending independent claim 33 be withdrawn because the Examiner failed to identify a legally proper suggestion for combining Jeffries and Bird.

In summary, Applicant respectfully submits that Jeffries and Bird fail to disclose all of the limitations recited in the pending independent claim 33. Furthermore, Applicant respectfully submits that the Examiner failed to identify a legally proper suggestion for combining Jeffries and Bird to reject the pending independent claim 33. The secondary prior art Meyer does not cure the aforementioned deficiencies of Jeffries and Bird. In view of at least the foregoing, Applicant respectfully requests the

allowance of the pending independent claim 33 and the corresponding dependent claims 34-35 and 37-52.

Referring now to the pending independent claim 53, Applicant respectfully submits that this claim is patentable in view of the cited prior art. The pending independent claim 53 recites the same or similar distinguishing limitations that have been discussed above with respect to the pending independent claim 33. As such, the aforementioned remarks regarding the patentability of the pending independent claim 33 apply as well to the pending independent claim 53. Accordingly, Applicant respectfully requests the allowance of the pending independent claim 53 and the corresponding dependent claims 54-55 and 57-64.

CONCLUSION

In view of the foregoing remarks, Applicant believes all of the claims currently pending in the application to be in a condition for allowance. Therefore, Applicant respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for pending claims 33-35, 37-55, and 57-64.

The Commissioner is hereby authorized to charge any fees for this paper to Deposit Account No. 50-1379.

Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

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